Remote Operations Center Committee Meeting 5/19/05

Attendees:
FNAL: Markus Albert, Guy Crockford, Erik Gottschalk, Elvin Harms, Jim Kowalkowski, Shuichi Kunori, Michael Lamm, Kaori Maeshima, Patricia McBride, Suzanne Panacek, Jean Slaughter, Alvin Tollestrup
CERN:, Mike Lamont
OTHER LOCATIONS: Al Thomas

Committee News – Erik Gottschalk
(http://docdb.fnal.gov/CMS-public/DocDB/ShowDocument?docid=110)

Erik- Committee News
Pier Oddone's presentation on Monday, May 16, to the EPP2010 committee (http://www7.nationalacademies.org/bpa/EPP2010.html) mentions Remote Operations in his roadmap for the next 15 years. Fermilab will have presence at CERN, but also develop 'remote operations' capabilities here at the lab. His presentation was also written up in Fermilab Today (http://www.fnal.gov/pub/today/epp2010_part3.html) … "we must create a remote virtual reality" …

Committee web page:
Our web page now has links to meeting minutes. These links are password protected. Members of the Advisory Committee can ask Erik for the password. However, minutes will also be e-mailed to all members of the committee.

Alvin T: would like to have password protection removed from the minutes. Kaori agrees. Alvin thinks that it gives the project a secrecy that is not constructive. A quick informal vote resulted in opening up the notes. (N.B. the password protection has been removed, and we agreed that draft minutes will not be posted until they have been reviewed).

We have three new members on the Advisory Committee: Hermann Schmickler, Al Thomas, and Avi Yagil.

Document Database:
The document database has 22 documents since this morning. Two recent additions are the slides that Pier Oddone showed on Monday (EPP2010), and some of Mike Lamont's presentations on remote applications development.

Suzanne and I went on a tour of the CDF control room yesterday. We recorded the interview with Kathy Copic, who took time out of her busy schedule to show us around. We will add the audio file of the interview to the document database (assuming that the audio quality is acceptable).

Report from CERN – Mike Lamont

Roberto Saban and Roger Bailey have agreed to join the advisory committee.

A 3-day review of LHC hardware commissioning has just taken place, with a thorough review of the proposed hardware commissioning procedures.

The tunnel controls' infrastructure had just been tested in preparation for the power converter short circuit tests in July. Remote tests were successful with 4 power converter controllers operated in the tunnel in simulation mode.

Jean: After reading the minutes from last week – there was a statement that Roberto was concerned about uncontrolled access to data from hardware commissioning. Is that because he is worried about information getting out beyond FNAL? Collaborations (such as CDF) have a well established privacy procedure. Could something similar be used here?

Mike: I think Roberto was concerned by the possibility of people coming to conclusions about ongoing tests without being fully aware of the circumstances.

Template for Scenarios – Erik Gottschalk
(http://docdb.fnal.gov/CMS-public/DocDB/ShowDocument?docid=114)

Last week we split into two subgroups (Accelerator and Detector) to begin developing scenarios that will be turned into requirements. It's important to keep in mind that at some point we will need to merge the requirements, and develop scenarios that involve both the accelerator and detector operations. Otherwise we will end up with two operations centers (one for LHC and one for CMS), and that's not what we're trying to do here.

(Several slides showing a short version of the sample scenario.)

Kaori – Special software was used at FNAL, but was not available at home. An FNAL expert was located here and not located at CERN. The detector expert could have called CERN rather than FNAL, since they have the same setup.
Erik – The application that triggered the alarm was only running for about a week. It was not clear if this was a bug in the code.
Kaori – But why would the detector expert not call CMS control room directly?
Erik – I'm not sure that one would want anybody calling the CMS control room whenever a problem is found. Maybe this is something that should be coordinated through the remote operations center.
Kaori – But the CMS shift person called the detector expert, so why wouldn't he return the call.

Erik – Maybe some of the details need to be revisited in this sample scenario.

Conclusion: We need to discuss why people would call FNAL rather than CERN directly.

The scenario template is on slide 5. It includes a scenario ID (N.B. we have decided to use the document database number for the ID, since each scenario will reside as a separate entry in the Doc DB), the name of the author and a date when the scenario was developed. This information is used to track the scenario. The template also includes the following:
Goal: Short, active verb phrase that describes the scenario
Level: Best guess whether this is a high level, mid-level, or low level scenario
Actors: Who is involved in the scenario
Trigger: What initiates the scenario
Narrative: A description of the scenario. This should be a numbered list of individual steps that explain various tasks in the order in which they occur (assuming there is a time sequence).
Exceptions: Any alternatives or error conditions that influence the scenario

Guy: This looks like a template that would be used for Use Cases in software development.

Erik: Yes, it's the same idea, but we are using the word "scenario" instead of "use case."

Guy: For Use Cases you usually specify preconditions.

Erik: We were thinking of including preconditions and post-conditions, but I couldn't come up with a good example. Saying that we need a CMS detector, and an LHC doesn't sound useful. I decided to leave out pre- and post-conditions for now. We can always add them later if necessary.

Report from Accelerator Group – Suzanne Panacek
(http://docdb.fnal.gov/CMS-public/DocDB/ShowDocument?docid=112)

Suzanne lists several scenarios that are being worked on by the Accelerator Group.

1) US-supplied instrumentation, such as a Schottky detector (Jean Slaughter):
Jean: The scenarios are like acts in a play, except that it seems that I'm attempting to write the entire play.
Elvin: We need to include troubleshooting in this scenario.
Jean: It has been very helpful to talk to Andreas (?) to work through a timeline.

2) Tools development at FNAL (Suzanne/Elliott)

3) Analysis from CERN perspective (Mike Lamont)
Mike: (using beta-beating as an example) Offline analysis is needed, application development, and time for dedicated testing.
Jean: We may need a portal into CERN to access the data.
Mike: This is a read-only exercise.
Elvin: Once you've done the analysis, you need the connectivity (ie. video conferencing) and access to multiple screens)
Jean: This is a situation where Elvin may have developed the application, but now he wants to be involved in the testing.

4) Magnet testing during hardware commissioning (Michael Lamm)
Michael: There will be field control rooms at CERN, but it's not clear how much access we will have here at FNAL. One can imagine that someone here would be able to contribute to the shift personnel.
Markus: This would be a big help for late shifts.
Kaori: Slow control data should be easier to access from a remote operations center compared to access from home.
Shuichi: Ideally this should be available to anybody, for example through web pages.
Shuichi: This helps to establish a community, for example the way it was done for the CMS HCAL for the test beam.

5) Beam commissioning, unobtrusively observing first beam in the LHC
Elvin: We want to be able to watch the beam commissioning at FNAL.

(Comments on Slide 5 in Suzanne's presentation.)

Two items:

- Passive vs. intrusive studies. Passive study needs auxiliary information displayed on multiple monitors.
- Intrusive study needs token and coordination with LHC.

Mike: There is extreme reluctance to turn over control.
Patty: I'm referring to instrumentation.
Suzanne: For example, developing a luminosity monitor.

(N.B. By "intrusive" we don't mean "steer the beam." One of Patty's examples of an intrusive study involves software for the analysis of the Schottky data.)

Elvin: We have made some assumptions that the remote operations center will be staffed for 24 hours.
Suzanne: We will have to extract a requirement for this.

Alvin T.: There are scenarios that are not included. These are the scenarios where the detector and the accelerator are part of the same scenario.

Erik: This is an important point. We are starting with separate scenarios for the accelerator and the detector for now, but we need to come back to scenarios that involve both. This is where it gets interesting.

Report from Detector Group – Patty McBride
(http://docdb.fnal.gov/CMS-public/DocDB/ShowDocument?docid=115)

Comments from members of the Advisory Committee – Jean Slaughter

Comments on Suzanne's slides:

Passive versus intrusive is potentially alarming. It really should be three levels:

a) totally passive
b) intrusive
c) actual modification of things that affect the beam

I suggest a more careful definition of what we mean by "intrusive". I think using the word "token" implies actual control.
I would take out the word "token", and just say "coordination" with CERN CCR.

I interpret "intrusive" as:

a) can't directly affect the beam
b) could interfere with something that someone in the CCR is doing. Examples: taking a piece of instrumentation (that is not part of some feedback or beam steering software...) offline or rebuilding a table.

Jean

Next meeting: May 26, 2005
